



#6

SEQUENCE LISTING

<10> Rotin, Daniela and Pham, Nam

<120> RAS Activator Nucleic Acid Molecules, Polypeptides and
Methods of Use

<130> DDW-5001-US

<140> 09/911,826

<141> 2001-07-20

<150> PCT/CA00/00042

<151> 2000-01-20

<150> 2,259,830

<151> 1999-01-20

<160> 27

<170> PatentIn Ver. 2.1

<210> 1

<211> 6568

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (63) ..(4562)

<400> 1

cttgccatcg tgagagattg gtacatgatg tgtaaattca gttcagcata tgtttcttca 60

tt atg aaa cca cta gca atc cca gct aac cat gga gtt atg ggc cag	107
Met Lys Pro Leu Ala Ile Pro Ala Asn His Gly Val Met Gly Gln	
1 5 10 15	

cag gag aaa cac tca ctt cct gca gat ttc aca aaa ctg cat ctt act	155
Gln Glu Lys His Ser Leu Pro Ala Asp Phe Thr Lys Leu His Leu Thr	
20 25 30	

gac agt ctc cac cca cag gtg acc cac gtt tct tct agc cat tca gga	203
Asp Ser Leu His Pro Gln Val Thr His Val Ser Ser Ser His Ser Gly	
35 40 45	

tgt agt atc act agt gat tct ggg agc agc agt ctt tct gat atc tac	251
Cys Ser Ile Thr Ser Asp Ser Gly Ser Ser Ser Leu Ser Asp Ile Tyr	
50 55 60	

cag gcc aca gaa agc gag gct ggt gat atg gac ctg agt ggg ttg cca	299
Gln Ala Thr Glu Ser Glu Ala Gly Asp Met Asp Leu Ser Gly Leu Pro	
65 70 75	

gaa aca gca gtg gat tcc gaa gac gac gac gat gaa gaa gac att gag	347
Glu Thr Ala Val Asp Ser Glu Asp Asp Asp Asp Glu Glu Asp Ile Glu	
80 85 90 95	

aga gca tca gat cct ctg atg agc agg gac att gtg aga gac tgc cta	395
Arg Ala Ser Asp Pro Leu Met Ser Arg Asp Ile Val Arg Asp Cys Leu	
100 105 110	
gag aag gac cca att gac cgg aca gat gat gac att gaa caa ctc ttg	443
Glu Lys Asp Pro Ile Asp Arg Thr Asp Asp Asp Ile Glu Gln Leu Leu	
115 120 125	
gaa ttt atg cac cag ttg cct gct ttt gcc aat atg aca atg tca gtg	491
Glu Phe Met His Gln Leu Pro Ala Phe Ala Asn Met Thr Met Ser Val	
130 135 140	
agg cga gaa ctc tgt gct gtg atg gtg ttc gca gtg gtg gaa aga gca	539
Arg Arg Glu Leu Cys Ala Val Met Val Phe Ala Val Val Glu Arg Ala	
145 150 155	
ggg acc ata gtg tta aat gat ggt gaa gag ctg gac tcc tgg tca gtg	587
Gly Thr Ile Val Leu Asn Asp Gly Glu Glu Leu Asp Ser Trp Ser Val	
160 165 170 175	
att ctc aat gga tct gtg gaa gtg act tat cca gat gga aaa gca gaa	635
Ile Leu Asn Gly Ser Val Glu Val Thr Tyr Pro Asp Gly Lys Ala Glu	
180 185 190	
ata ctg tgc atg gga aat agt ttt ggt gtc tct cct acc atg gac aaa	683
Ile Leu Cys Met Gly Asn Ser Phe Gly Val Ser Pro Thr Met Asp Lys	
195 200 205	
gaa tac atg aaa gga gtg atg aga aca aag gtg gat gac tgc cag ttt	731
Glu Tyr Met Lys Gly Val Met Arg Thr Lys Val Asp Asp Cys Gln Phe	
210 215 220	
gtc tgc ata gcc cag caa gat tac tgc cgt att ctc aat caa gta gaa	779
Val Cys Ile Ala Gln Gln Asp Tyr Cys Arg Ile Leu Asn Gln Val Glu	
225 230 235	
aag aac atg caa aaa gtt gaa gag gaa gga gag att gtt atg gtg aaa	827
Lys Asn Met Gln Lys Val Glu Glu Glu Gly Glu Ile Val Met Val Lys	
240 245 250 255	
gaa cac cga gaa ctt gat cga act gga aca aga aag gga cac att gtc	875
Glu His Arg Glu Leu Asp Arg Thr Gly Thr Arg Lys Gly His Ile Val	
260 265 270	
atc aag ggt acc tca gaa agg tta aca atg cat ttg gtg gaa gag cat	923
Ile Lys Gly Thr Ser Glu Arg Leu Thr Met His Leu Val Glu Glu His	
275 280 285	
tca gta gta gat cca aca ttc ata gaa gac ttt ctg ttg acc tat agg	971
Ser Val Val Asp Pro Thr Phe Ile Glu Asp Phe Leu Leu Thr Tyr Arg	
290 295 300	
act ttt ctt tct agc cca atg gaa gtg ggc aaa aag tta ttg gag tgg	1019
Thr Phe Leu Ser Ser Pro Met Glu Val Gly Lys Lys Leu Leu Glu Trp	
305 310 315	

ttt aat gac ccg agc ctc agg gat aag gtt aca cgg gta gta tta ttg	1067
Phe Asn Asp Pro Ser Leu Arg Asp Lys Val Thr Arg Val Val Leu Leu	
320 325 330 335	
tggttaaatcactttgaaaggatcctgcaatgact	1115
TrpValAsnAsnHisPheAsnAspPheGluGlyAspProAlaMetThr	
340 345 350	
cga ttt tta gaa gaa ttt gaa aac aat ctg gaa aga gag aaa atg ggt	1163
Arg Phe Leu Glu Glu Phe Glu Asn Asn Leu Glu Arg Glu Lys Met Gly	
355 360 365	
gga cac cta agg ctg ttg aat atc gcg tgt gct gct aaa gca aaa aga	1211
Gly His Leu Arg Leu Leu Asn Ile Ala Cys Ala Ala Lys Ala Lys Arg	
370 375 380	
aga ttg atg acg tta aca aaa cca tcc cga gaa gct cct ttg cct ttt	1259
Arg Leu Met Thr Leu Thr Lys Pro Ser Arg Glu Ala Pro Leu Pro Phe	
385 390 395	
atc tta ctt gga ggc tct gag aag gga ttt gga atc ttt gtt gac agt	1307
Ile Leu Leu Gly Gly Ser Glu Lys Gly Phe Gly Ile Phe Val Asp Ser	
400 405 410 415	
gta gat tca ggt agc aaa gca act gaa gca ggc ttg aaa cgg ggg gat	1355
Val Asp Ser Gly Ser Lys Ala Thr Glu Ala Gly Leu Lys Arg Gly Asp	
420 425 430	
cag ata tta gaa gta aat ggc caa aac ttt gaa aac att cag ctg tca	1403
Gln Ile Leu Glu Val Asn Gly Gln Asn Phe Glu Asn Ile Gln Leu Ser	
435 440 445	
aaa gct atg gaa att ctt aga aat aac aca cat tta tct atc act gtg	1451
Lys Ala Met Glu Ile Leu Arg Asn Asn Thr His Leu Ser Ile Thr Val	
450 455 460	
aaa acc aat tta ttt gta ttt aaa gaa ctt cta aca aga ttg tca gaa	1499
Lys Thr Asn Leu Phe Val Phe Lys Glu Leu Leu Thr Arg Leu Ser Glu	
465 470 475	
gag aaa aga aat ggt gcc ccc cac ctt cct aaa att ggt gac att aaa	1547
Glu Lys Arg Asn Gly Ala Pro His Leu Pro Lys Ile Gly Asp Ile Lys	
480 485 490 495	
aag gcc agt cgc tac tcc att cca gat ctt gct gta gat gta gaa cag	1595
Lys Ala Ser Arg Tyr Ser Ile Pro Asp Leu Ala Val Asp Val Glu Gln	
500 505 510	
gtg ata gga ctt gaa aaa gtg aac aaa aaa agt aaa gcc aac act gtg	1643
Val Ile Gly Leu Glu Lys Val Asn Lys Lys Ser Lys Ala Asn Thr Val	
515 520 525	
gga gga agg aac aag ctg aaa aag ata ctc gac aag act cgg atc agt	1691
Gly Gly Arg Asn Lys Leu Lys Lys Ile Leu Asp Lys Thr Arg Ile Ser	
530 535 540	
atc ttg cca cag aaa cca tac aat gat att ggg att ggt cag tct caa	1739

Ile	Leu	Pro	Gln	Lys	Pro	Tyr	Asn	Asp	Ile	Gly	Ile	Gly	Gln	Ser	Gln		
545						550					555						
gat	gac	agc	ata	gta	gga	tta	agg	cag	aca	aag	cac	atc	cca	act	gca	1787	
Asp	Asp	Ser	Ile	Val	Gly	Leu	Arg	Gln	Thr	Lys	His	Ile	Pro	Thr	Ala		
560					565					570					575		
ttg	cct	gtc	agt	gga	acc	tta	tca	tcc	agt	aat	cct	gat	tta	ttg	cag	1835	
Leu	Pro	Val	Ser	Gly	Thr	Leu	Ser	Ser	Ser	Asn	Pro	Asp	Leu	Leu	Gln		
				580					585					590			
tca	cat	cat	cgc	att	tta	gac	ttc	agt	gct	act	cct	gac	ttg	cca	gat	1883	
Ser	His	His	Arg	Ile	Leu	Asp	Phe	Ser	Ala	Thr	Pro	Asp	Leu	Pro	Asp		
			595					600					605				
caa	gtg	cta	agg	gtt	ttt	aag	gct	gat	cag	caa	agc	cgc	tac	atc	atg	1931	
Gln	Val	Leu	Arg	Val	Phe	Lys	Ala	Asp	Gln	Gln	Ser	Arg	Tyr	Ile	Met		
		610					615					620					
atc	agt	aag	gac	act	aca	gca	aag	gaa	gtg	gtc	att	cag	gct	atc	agg	1979	
Ile	Ser	Lys	Asp	Thr	Thr	Ala	Lys	Glu	Val	Val	Ile	Gln	Ala	Ile	Arg		
	625					630					635						
gag	ttt	gct	gtt	act	gcc	acc	ccg	gat	caa	tat	tca	cta	tgt	gag	gtc	2027	
Glu	Phe	Ala	Val	Thr	Ala	Thr	Pro	Asp	Gln	Tyr	Ser	Leu	Cys	Glu	Val		
640					645					650					655		
tct	gtc	aca	cct	gag	gga	gta	atc	aaa	caa	aga	aga	ctt	cca	gat	cag	2075	
Ser	Val	Thr	Pro	Glu	Gly	Val	Ile	Lys	Gln	Arg	Arg	Leu	Pro	Asp	Gln		
				660					665					670			
ctt	tcc	aaa	ctt	gca	gac	aga	ata	caa	ctg	agt	gga	agg	tat	tat	ctg	2123	
Leu	Ser	Lys	Leu	Ala	Asp	Arg	Ile	Gln	Leu	Ser	Gly	Arg	Tyr	Tyr	Leu		
			675					680					685				
aaa	aac	aac	atg	gaa	aca	gaa	act	ctt	tgt	tca	gat	gaa	gat	gct	cag	2171	
Lys	Asn	Asn	Met	Glu	Thr	Glu	Thr	Leu	Cys	Ser	Asp	Glu	Asp	Ala	Gln		
		690					695					700					
gag	ttg	ttg	aga	gag	agt	caa	att	tcc	ctc	ctt	cag	ctc	agc	act	gtg	2219	
Glu	Leu	Leu	Arg	Glu	Ser	Gln	Ile	Ser	Leu	Leu	Gln	Leu	Ser	Thr	Val		
	705					710					715						
gaa	gtt	gca	aca	cag	ctc	tct	atg	cga	aat	ttt	gaa	ctc	ttt	cgc	aac	2267	
Glu	Val	Ala	Thr	Gln	Leu	Ser	Met	Arg	Asn	Phe	Glu	Leu	Phe	Arg	Asn		
720					725					730					735		
att	gaa	cct	act	gaa	tat	ata	gat	gat	tta	ttt	aaa	ctc	aga	tca	aaa	2315	
Ile	Glu	Pro	Thr	Glu	Tyr	Ile	Asp	Asp	Leu	Phe	Lys	Leu	Arg	Ser	Lys		
				740					745					750			
acc	agc	tgt	gcc	aac	ctg	aag	aga	ttt	gaa	gaa	gtc	att	aac	cag	gaa	2363	
Thr	Ser	Cys	Ala	Asn	Leu	Lys	Arg	Phe	Glu	Glu	Val	Ile	Asn	Gln	Glu		
			755					760					765				
aca	ttt	tgg	gta	gca	tct	gaa	att	ctc	aga	gaa	aca	aac	cag	ctg	aag	2411	
Thr	Phe	Trp	Val	Ala	Ser	Glu	Ile	Leu	Arg	Glu	Thr	Asn	Gln	Leu	Lys		

770	775	780	
agg atg aag atc att aag cat ttc atc aag ata gca ctg cac tgt agg			2459
Arg Met Lys Ile Ile Lys His Phe Ile Lys Ile Ala Leu His Cys Arg			
785	790	795	
gaa tgc aag aat ttt aac tca atg ttt gca atc atc agt ggc cta aac			2507
Glu Cys Lys Asn Phe Asn Ser Met Phe Ala Ile Ile Ser Gly Leu Asn			
800	805	810	815
ctg gca cca gtg gca aga ctg cga acg acc tgg gag aaa ctt ccc aat			2555
Leu Ala Pro Val Ala Arg Leu Arg Thr Thr Trp Glu Lys Leu Pro Asn			
	820	825	830
aaa tac gaa aaa cta ttt caa gat ctc caa gac ctg ttt gat cct tcc			2603
Lys Tyr Glu Lys Leu Phe Gln Asp Leu Gln Asp Leu Phe Asp Pro Ser			
	835	840	845
aga aac atg gca aaa tat cgt aat gtt ctc aat agt caa aat cta caa			2651
Arg Asn Met Ala Lys Tyr Arg Asn Val Leu Asn Ser Gln Asn Leu Gln			
	850	855	860
cct ccc ata atc cct cta ttc cca gtt atc aaa aag gat ctc acc ttc			2699
Pro Pro Ile Ile Pro Leu Phe Pro Val Ile Lys Lys Asp Leu Thr Phe			
	865	870	875
ctt cac gaa gga aat gac tca aaa gta gac ggg ctg gtc aat ttt gag			2747
Leu His Glu Gly Asn Asp Ser Lys Val Asp Gly Leu Val Asn Phe Glu			
880	885	890	895
aag cta agg atg att gca aaa gaa att cgt cac gtt ggc cga atg gct			2795
Lys Leu Arg Met Ile Ala Lys Glu Ile Arg His Val Gly Arg Met Ala			
	900	905	910
tca gtg aac atg gac cct gcc ctc atg ttc agg act cgg aag aag aaa			2843
Ser Val Asn Met Asp Pro Ala Leu Met Phe Arg Thr Arg Lys Lys Lys			
	915	920	925
tgg cgg agt ttg ggg tct ctc agc cag ggt agt aca aat gca aca gtg			2891
Trp Arg Ser Leu Gly Ser Leu Ser Gln Gly Ser Thr Asn Ala Thr Val			
	930	935	940
cta gat gtt gct cag aca ggt ggt cat aaa aag cgg gta cgt cgt agt			2939
Leu Asp Val Ala Gln Thr Gly Gly His Lys Lys Arg Val Arg Arg Ser			
	945	950	955
tcc ttt ctc aat gcc aaa aag ctt tat gaa gat gcc caa atg gct cga			2987
Ser Phe Leu Asn Ala Lys Lys Leu Tyr Glu Asp Ala Gln Met Ala Arg			
960	965	970	975
aaa gtg aag cag tac ctt tcc aat ttg gag cta gaa atg gac gag gag			3035
Lys Val Lys Gln Tyr Leu Ser Asn Leu Glu Leu Glu Met Asp Glu Glu			
	980	985	990
agt ctt cag aca tta tct ctg cag tgt gag cca gca acc aac aca ttg			3083
Ser Leu Gln Thr Leu Ser Leu Gln Cys Glu Pro Ala Thr Asn Thr Leu			
	995	1000	1005

cct aag aat cct ggt gac aaa aag cct gtc aaa tcc gag acc tct cca	3131
Pro Lys Asn Pro Gly Asp Lys Lys Pro Val Lys Ser Glu Thr Ser Pro	
1010 1015 1020	
gta gct cca agg gca ggg tca caa cag aaa gct cag tcc ctg cca cag	3179
Val Ala Pro Arg Ala Gly Ser Gln Gln Lys Ala Gln Ser Leu Pro Gln	
1025 1030 1035	
ccc cag cag cag cca cca cca gca cat aaa atc aac cag gga cta cag	3227
Pro Gln Gln Gln Pro Pro Pro Ala His Lys Ile Asn Gln Gly Leu Gln	
1040 1045 1050 1055	
gtt ccc gcc gtg tcc ctt tat cct tca cgg aag aaa gtg ccc gta aag	3275
Val Pro Ala Val Ser Leu Tyr Pro Ser Arg Lys Lys Val Pro Val Lys	
1060 1065 1070	
gat ctc cca cct ttt ggc ata aac tct cca caa gct tta aaa aaa att	3323
Asp Leu Pro Pro Phe Gly Ile Asn Ser Pro Gln Ala Leu Lys Lys Ile	
1075 1080 1085	
ctt tct ttg tct gaa gaa gga agt ttg gaa cgt cac aag aaa cag gct	3371
Leu Ser Leu Ser Glu Glu Gly Ser Leu Glu Arg His Lys Lys Gln Ala	
1090 1095 1100	
gaa gat aca ata tca aat gca tct tcg cag ctt tct tct cct cct act	3419
Glu Asp Thr Ile Ser Asn Ala Ser Ser Gln Leu Ser Ser Pro Pro Thr	
1105 1110 1115	
tct cca cag agt tct cca agg aaa ggc tat act ttg gct ccc agt ggt	3467
Ser Pro Gln Ser Ser Pro Arg Lys Gly Tyr Thr Leu Ala Pro Ser Gly	
1120 1125 1130 1135	
act gtg gat aat ttt tca gat tct ggt cac agt gaa att tct tca cga	3515
Thr Val Asp Asn Phe Ser Asp Ser Gly His Ser Glu Ile Ser Ser Arg	
1140 1145 1150	
tcc agt att gtt agc aat tcg tct ttt gac tca gtg cca gtc tca ctg	3563
Ser Ser Ile Val Ser Asn Ser Ser Phe Asp Ser Val Pro Val Ser Leu	
1155 1160 1165	
cac gat gag agg cgc cag agg cat tct gtc agc atc gtg gaa aca aac	3611
His Asp Glu Arg Arg Gln Arg His Ser Val Ser Ile Val Glu Thr Asn	
1170 1175 1180	
cta ggg atg ggc agg atg gag agg cgg acc atg att gaa cct gat cag	3659
Leu Gly Met Gly Arg Met Glu Arg Arg Thr Met Ile Glu Pro Asp Gln	
1185 1190 1195	
tat agc ttg ggg tcc tat gca cca atg tcc gag ggc cga ggc tta tat	3707
Tyr Ser Leu Gly Ser Tyr Ala Pro Met Ser Glu Gly Arg Gly Leu Tyr	
1200 1205 1210 1215	
gct aca gct aca gta att tct tct cca agc aca gag gaa ctt tcc cag	3755
Ala Thr Ala Thr Val Ile Ser Ser Pro Ser Thr Glu Glu Leu Ser Gln	
1220 1225 1230	

gat cag ggg gat cgc gcg tca ctt gat gct gct gac agt ggc cgt ggg	3803
Asp Gln Gly Asp Arg Ala Ser Leu Asp Ala Ala Asp Ser Gly Arg Gly	
1235 1240 1245	
agc tgg acg tca tgc tca agt ggc tcc cat gat aat ata cag acg atc	3851
Ser Trp Thr Ser Cys Ser Ser Gly Ser His Asp Asn Ile Gln Thr Ile	
1250 1255 1260	
cag cac cag aga agc tgg gag act ctt cca ttc ggg cat act cac ttt	3899
Gln His Gln Arg Ser Trp Glu Thr Leu Pro Phe Gly His Thr His Phe	
1265 1270 1275	
gat tat tca ggg gat cct gca ggt tta tgg gca tca agc agc cat atg	3947
Asp Tyr Ser Gly Asp Pro Ala Gly Leu Trp Ala Ser Ser Ser His Met	
1280 1285 1290 1295	
gac caa att atg ttt tct gat cat agc aca aag tat aac agg caa aat	3995
Asp Gln Ile Met Phe Ser Asp His Ser Thr Lys Tyr Asn Arg Gln Asn	
1300 1305 1310	
caa agt aga gag agc ctt gaa caa gcc cag tcc cga gca agc tgg gcg	4043
Gln Ser Arg Glu Ser Leu Glu Gln Ala Gln Ser Arg Ala Ser Trp Ala	
1315 1320 1325	
tct tcc aca ggt tac tgg gga gaa gac tca gaa ggt gac aca ggc aca	4091
Ser Ser Thr Gly Tyr Trp Gly Glu Asp Ser Glu Gly Asp Thr Gly Thr	
1330 1335 1340	
ata aag cgg agg ggt gga aag gat gtt tcc att gaa gcc gaa agc agt	4139
Ile Lys Arg Arg Gly Gly Lys Asp Val Ser Ile Glu Ala Glu Ser Ser	
1345 1350 1355	
agc cta acg tct gtg act acg gaa gaa acc aag cct gtc ccc atg cct	4187
Ser Leu Thr Ser Val Thr Thr Glu Glu Thr Lys Pro Val Pro Met Pro	
1360 1365 1370 1375	
gcc cac ata gct gtg gca tca agt act aca aag ggg ctc att gca cga	4235
Ala His Ile Ala Val Ala Ser Ser Thr Thr Lys Gly Leu Ile Ala Arg	
1380 1385 1390	
aag gag ggc agg tat cga gag ccc ccg ccc acc cct ccc ggc tac att	4283
Lys Glu Gly Arg Tyr Arg Glu Pro Pro Pro Thr Pro Pro Gly Tyr Ile	
1395 1400 1405	
gga att ccc att act gac ttt cca gaa ggg cac tcc cat cca gcc agg	4331
Gly Ile Pro Ile Thr Asp Phe Pro Glu Gly His Ser His Pro Ala Arg	
1410 1415 1420	
aaa ccg ccg gac tac aac gtg gcc ctt cag aga tcg cgg atg gtc gca	4379
Lys Pro Pro Asp Tyr Asn Val Ala Leu Gln Arg Ser Arg Met Val Ala	
1425 1430 1435	
cga tcc tcc gac aca gct ggg cct tca tcc gta cag cag cca cat ggg	4427
Arg Ser Ser Asp Thr Ala Gly Pro Ser Ser Val Gln Gln Pro His Gly	
1440 1445 1450 1455	
cat ccc acc agc agc agg cct gtg aac aaa cct cag tgg cat aaa ccg	4475

His Pro Thr Ser Ser Arg Pro Val Asn Lys Pro Gln Trp His Lys Pro
1460 1465 1470

aac gag tct gac ccg cgc ctc gcc cct tat cag tcc caa ggg ttt tcc 4523
Asn Glu Ser Asp Pro Arg Leu Ala Pro Tyr Gln Ser Gln Gly Phe Ser
1475 1480 1485

acc gag gag gat gaa gat gaa caa gtt tct gct gtt tga ggcacagact 4572
Thr Glu Glu Asp Glu Asp Glu Gln Val Ser Ala Val
1490 1495

tttctggaag cagagcgagc cacctgaaag gagagcacia gaagacgtcc tgagcattgg 4632
agccttgga ctcacattct gaggacggtg gaccagtttg cctccttccc tgccttaaaa 4692
gcagcatggg gcttcttctc cccttcttcc tttccccctt gcatgtgaaa tactgtgaag 4752
aaattgcctt ggcacttttc agactttgtt gcttgaaatg cacagtgcag caatcttcga 4812
gctccactg ttgctgcctg ccacatcaca cagtatcatt ccaaattcca agatcatcac 4872
aacaagatga ttactctgg ctgcattct caatgcctgg aaggattttt tttaattctc 4932
cttttagatt tcaatccagt cctagcatt gatctcattg ggataatgag aaaagctagc 4992
cattgaacta cttggggcct ttaaccacc aaggaagaca aagaaaaaca atgaaatcct 5052
ttgagtacag tgcttgcca cttggttaca atgtcctcct tttaaaaaaa aaaatgagtt 5112
taaagatttt gttcagagag taaatatata tccatttaat gattacagta ttattttaaa 5172
ccttaagtag gggtgccagc ctgggttctg aaaaaccaa tatgccggac aggggtgtggc 5232
cacaccaaga agacgggaag acctggcttg tgacctggc tcccatgtc cttctgggtc 5292
caccgcgaa gtgcctatc ctggaagtat gaaatgtag ccaattaata ccaagacacc 5352
tcatctgctc cttccccagt ggatgggggtt cttctgtaaa actggttgca catggccagg 5412
ggaggggaact aggacccttg tgtcctgtct gagccttatg gaggcaggac ggtgtcattg 5472
gcggatgtgt cctgtccat tgagatggat ggcaaaccct atttttaagt tatatttctt 5532
tgatttttgt taatttagag gtgtaggttt tgtttttgtt ttttggtttt tttttaagag 5592
aaacatttat aactggatag cattgcagtg aaagcagctt gggatggttg agctaagcc 5652
agctgtttat actgctcttt caagacagcc tccctttatt gaattggcat tagggaataa 5712
acaagccttt aaacgtgata aaagatcaaa aacctgggta gacatgccag cctttgcaag 5772
gcaggtagt caccaaagac taacctcaa gtggctttat ggacgtgca tatagagaag 5832
gcctaagtgt agcaaccatc tgctcacagc tgctattaac cctataatga ctgaaatgac 5892
ccctccactc tatttttgtg ttgttttgca cagactccgg aaaagtgaag gctgccaatc 5952

tgagtagtac tcaaagtga ggaactgctg gtcttggtatt tttttccat taaattcagc 6012
 tgatcatatt gatcagtaga taaacgtaaa tagcttcaaa ttttaaaagt ggaattgcag 6072
 tgttttttca ctgtatcaaa caatgtcagt gctttattta ataattctct tctgtatcat 6132
 ggcatttgct tacttgctta ttacattgtc aattatgcat ttgtaatttt acatgtaata 6192
 tgcattattt gccagtttta ttatataggc tatggacctc atgtgcatat agaaagacag 6252
 aaatctagct ctaccacaag ttgcacaaat gttatctaag cattaagtaa ttgtagaaca 6312
 taggactgct aatctcagtt cgctctgtga tgtcaagtgc agaattgtaca attaactggg 6372
 gatttcctca tacttttgat actacttgta cctgtatgtc ttttagaaag acattgggtgg 6432
 agtctgtatc ccttttgat ttttaataca ataattgtac atattgggta tatttttggt 6492
 gaagatggta gaaatgtact atgtttatgc ttctacatcc agtttgtaca agctggaaaa 6552
 taaataaata taacat 6568

<210> 2
 <211> 1499
 <212> PRT
 <213> Homo sapiens

<400> 2
 Met Lys Pro Leu Ala Ile Pro Ala Asn His Gly Val Met Gly Gln Gln
 1 5 10 15
 Glu Lys His Ser Leu Pro Ala Asp Phe Thr Lys Leu His Leu Thr Asp
 20 25 30
 Ser Leu His Pro Gln Val Thr His Val Ser Ser Ser His Ser Gly Cys
 35 40 45
 Ser Ile Thr Ser Asp Ser Gly Ser Ser Ser Leu Ser Asp Ile Tyr Gln
 50 55 60
 Ala Thr Glu Ser Glu Ala Gly Asp Met Asp Leu Ser Gly Leu Pro Glu
 65 70 75 80
 Thr Ala Val Asp Ser Glu Asp Asp Asp Asp Glu Glu Asp Ile Glu Arg
 85 90 95
 Ala Ser Asp Pro Leu Met Ser Arg Asp Ile Val Arg Asp Cys Leu Glu
 100 105 110
 Lys Asp Pro Ile Asp Arg Thr Asp Asp Asp Ile Glu Gln Leu Leu Glu
 115 120 125
 Phe Met His Gln Leu Pro Ala Phe Ala Asn Met Thr Met Ser Val Arg
 130 135 140
 Arg Glu Leu Cys Ala Val Met Val Phe Ala Val Val Glu Arg Ala Gly
 145 150 155 160
 Thr Ile Val Leu Asn Asp Gly Glu Glu Leu Asp Ser Trp Ser Val Ile
 165 170 175
 Leu Asn Gly Ser Val Glu Val Thr Tyr Pro Asp Gly Lys Ala Glu Ile
 180 185 190
 Leu Cys Met Gly Asn Ser Phe Gly Val Ser Pro Thr Met Asp Lys Glu
 195 200 205
 Tyr Met Lys Gly Val Met Arg Thr Lys Val Asp Asp Cys Gln Phe Val
 210 215 220

Cys	Ile	Ala	Gln	Gln	Asp	Tyr	Cys	Arg	Ile	Leu	Asn	Gln	Val	Glu	Lys	225	230	235	240
Asn	Met	Gln	Lys	Val	Glu	Glu	Glu	Gly	Glu	Ile	Val	Met	Val	Lys	Glu	245	250	255	
His	Arg	Glu	Leu	Asp	Arg	Thr	Gly	Thr	Arg	Lys	Gly	His	Ile	Val	Ile	260	265	270	
Lys	Gly	Thr	Ser	Glu	Arg	Leu	Thr	Met	His	Leu	Val	Glu	Glu	His	Ser	275	280	285	
Val	Val	Asp	Pro	Thr	Phe	Ile	Glu	Asp	Phe	Leu	Leu	Thr	Tyr	Arg	Thr	290	295	300	
Phe	Leu	Ser	Ser	Pro	Met	Glu	Val	Gly	Lys	Lys	Leu	Leu	Glu	Trp	Phe	305	310	315	320
Asn	Asp	Pro	Ser	Leu	Arg	Asp	Lys	Val	Thr	Arg	Val	Val	Leu	Leu	Trp	325	330	335	
Val	Asn	Asn	His	Phe	Asn	Asp	Phe	Glu	Gly	Asp	Pro	Ala	Met	Thr	Arg	340	345	350	
Phe	Leu	Glu	Glu	Phe	Glu	Asn	Asn	Leu	Glu	Arg	Glu	Lys	Met	Gly	Gly	355	360	365	
His	Leu	Arg	Leu	Leu	Asn	Ile	Ala	Cys	Ala	Ala	Lys	Ala	Lys	Arg	Arg	370	375	380	
Leu	Met	Thr	Leu	Thr	Lys	Pro	Ser	Arg	Glu	Ala	Pro	Leu	Pro	Phe	Ile	385	390	395	400
Leu	Leu	Gly	Gly	Ser	Glu	Lys	Gly	Phe	Gly	Ile	Phe	Val	Asp	Ser	Val	405	410	415	
Asp	Ser	Gly	Ser	Lys	Ala	Thr	Glu	Ala	Gly	Leu	Lys	Arg	Gly	Asp	Gln	420	425	430	
Ile	Leu	Glu	Val	Asn	Gly	Gln	Asn	Phe	Glu	Asn	Ile	Gln	Leu	Ser	Lys	435	440	445	
Ala	Met	Glu	Ile	Leu	Arg	Asn	Asn	Thr	His	Leu	Ser	Ile	Thr	Val	Lys	450	455	460	
Thr	Asn	Leu	Phe	Val	Phe	Lys	Glu	Leu	Leu	Thr	Arg	Leu	Ser	Glu	Glu	465	470	475	480
Lys	Arg	Asn	Gly	Ala	Pro	His	Leu	Pro	Lys	Ile	Gly	Asp	Ile	Lys	Lys	485	490	495	
Ala	Ser	Arg	Tyr	Ser	Ile	Pro	Asp	Leu	Ala	Val	Asp	Val	Glu	Gln	Val	500	505	510	
Ile	Gly	Leu	Glu	Lys	Val	Asn	Lys	Lys	Ser	Lys	Ala	Asn	Thr	Val	Gly	515	520	525	
Gly	Arg	Asn	Lys	Leu	Lys	Lys	Ile	Leu	Asp	Lys	Thr	Arg	Ile	Ser	Ile	530	535	540	
Leu	Pro	Gln	Lys	Pro	Tyr	Asn	Asp	Ile	Gly	Ile	Gly	Gln	Ser	Gln	Asp	545	550	555	560
Asp	Ser	Ile	Val	Gly	Leu	Arg	Gln	Thr	Lys	His	Ile	Pro	Thr	Ala	Leu	565	570	575	
Pro	Val	Ser	Gly	Thr	Leu	Ser	Ser	Ser	Asn	Pro	Asp	Leu	Leu	Gln	Ser	580	585	590	
His	His	Arg	Ile	Leu	Asp	Phe	Ser	Ala	Thr	Pro	Asp	Leu	Pro	Asp	Gln	595	600	605	
Val	Leu	Arg	Val	Phe	Lys	Ala	Asp	Gln	Gln	Ser	Arg	Tyr	Ile	Met	Ile	610	615	620	
Ser	Lys	Asp	Thr	Thr	Ala	Lys	Glu	Val	Val	Ile	Gln	Ala	Ile	Arg	Glu	625	630	635	640
Phe	Ala	Val	Thr	Ala	Thr	Pro	Asp	Gln	Tyr	Ser	Leu	Cys	Glu	Val	Ser	645	650	655	
Val	Thr	Pro	Glu	Gly	Val	Ile	Lys	Gln	Arg	Arg	Leu	Pro	Asp	Gln	Leu	660	665	670	
Ser	Lys	Leu	Ala	Asp	Arg	Ile	Gln	Leu	Ser	Gly	Arg	Tyr	Tyr	Leu	Lys				

675					680					685					
Asn	Asn	Met	Glu	Thr	Glu	Thr	Leu	Cys	Ser	Asp	Glu	Asp	Ala	Gln	Glu
690					695					700					
Leu	Leu	Arg	Glu	Ser	Gln	Ile	Ser	Leu	Leu	Gln	Leu	Ser	Thr	Val	Glu
705					710					715					720
Val	Ala	Thr	Gln	Leu	Ser	Met	Arg	Asn	Phe	Glu	Leu	Phe	Arg	Asn	Ile
				725					730					735	
Glu	Pro	Thr	Glu	Tyr	Ile	Asp	Asp	Leu	Phe	Lys	Leu	Arg	Ser	Lys	Thr
			740				745					750			
Ser	Cys	Ala	Asn	Leu	Lys	Arg	Phe	Glu	Glu	Val	Ile	Asn	Gln	Glu	Thr
		755				760					765				
Phe	Trp	Val	Ala	Ser	Glu	Ile	Leu	Arg	Glu	Thr	Asn	Gln	Leu	Lys	Arg
770					775					780					
Met	Lys	Ile	Ile	Lys	His	Phe	Ile	Lys	Ile	Ala	Leu	His	Cys	Arg	Glu
785					790					795					800
Cys	Lys	Asn	Phe	Asn	Ser	Met	Phe	Ala	Ile	Ile	Ser	Gly	Leu	Asn	Leu
				805					810					815	
Ala	Pro	Val	Ala	Arg	Leu	Arg	Thr	Thr	Trp	Glu	Lys	Leu	Pro	Asn	Lys
			820				825						830		
Tyr	Glu	Lys	Leu	Phe	Gln	Asp	Leu	Gln	Asp	Leu	Phe	Asp	Pro	Ser	Arg
		835				840					845				
Asn	Met	Ala	Lys	Tyr	Arg	Asn	Val	Leu	Asn	Ser	Gln	Asn	Leu	Gln	Pro
	850					855					860				
Pro	Ile	Ile	Pro	Leu	Phe	Pro	Val	Ile	Lys	Lys	Asp	Leu	Thr	Phe	Leu
865					870					875					880
His	Glu	Gly	Asn	Asp	Ser	Lys	Val	Asp	Gly	Leu	Val	Asn	Phe	Glu	Lys
				885				890						895	
Leu	Arg	Met	Ile	Ala	Lys	Glu	Ile	Arg	His	Val	Gly	Arg	Met	Ala	Ser
			900				905					910			
Val	Asn	Met	Asp	Pro	Ala	Leu	Met	Phe	Arg	Thr	Arg	Lys	Lys	Lys	Trp
		915				920					925				
Arg	Ser	Leu	Gly	Ser	Leu	Ser	Gln	Gly	Ser	Thr	Asn	Ala	Thr	Val	Leu
	930					935					940				
Asp	Val	Ala	Gln	Thr	Gly	Gly	His	Lys	Lys	Arg	Val	Arg	Arg	Ser	Ser
945					950					955					960
Phe	Leu	Asn	Ala	Lys	Lys	Leu	Tyr	Glu	Asp	Ala	Gln	Met	Ala	Arg	Lys
				965				970						975	
Val	Lys	Gln	Tyr	Leu	Ser	Asn	Leu	Glu	Leu	Glu	Met	Asp	Glu	Glu	Ser
			980				985					990			
Leu	Gln	Thr	Leu	Ser	Leu	Gln	Cys	Glu	Pro	Ala	Thr	Asn	Thr	Leu	Pro
		995				1000					1005				
Lys	Asn	Pro	Gly	Asp	Lys	Lys	Pro	Val	Lys	Ser	Glu	Thr	Ser	Pro	Val
	1010					1015					1020				
Ala	Pro	Arg	Ala	Gly	Ser	Gln	Gln	Lys	Ala	Gln	Ser	Leu	Pro	Gln	Pro
1025					1030					1035					1040
Gln	Gln	Gln	Pro	Pro	Pro	Ala	His	Lys	Ile	Asn	Gln	Gly	Leu	Gln	Val
				1045				1050						1055	
Pro	Ala	Val	Ser	Leu	Tyr	Pro	Ser	Arg	Lys	Lys	Val	Pro	Val	Lys	Asp
		1060				1065					1070				
Leu	Pro	Pro	Phe	Gly	Ile	Asn	Ser	Pro	Gln	Ala	Leu	Lys	Lys	Ile	Leu
	1075					1080					1085				
Ser	Leu	Ser	Glu	Glu	Gly	Ser	Leu	Glu	Arg	His	Lys	Lys	Gln	Ala	Glu
	1090					1095					1100				
Asp	Thr	Ile	Ser	Asn	Ala	Ser	Ser	Gln	Leu	Ser	Ser	Pro	Pro	Thr	Ser
1105					1110					1115					1120
Pro	Gln	Ser	Ser	Pro	Arg	Lys	Gly	Tyr	Thr	Leu	Ala	Pro	Ser	Gly	Thr
				1125				1130						1135	

Val Asp Asn Phe Ser Asp Ser Gly His Ser Glu Ile Ser Ser Arg Ser
 1140 1145 1150
 Ser Ile Val Ser Asn Ser Ser Phe Asp Ser Val Pro Val Ser Leu His
 1155 1160 1165
 Asp Glu Arg Arg Gln Arg His Ser Val Ser Ile Val Glu Thr Asn Leu
 1170 1175 1180
 Gly Met Gly Arg Met Glu Arg Arg Thr Met Ile Glu Pro Asp Gln Tyr
 1185 1190 1195 1200
 Ser Leu Gly Ser Tyr Ala Pro Met Ser Glu Gly Arg Gly Leu Tyr Ala
 1205 1210 1215
 Thr Ala Thr Val Ile Ser Ser Pro Ser Thr Glu Glu Leu Ser Gln Asp
 1220 1225 1230
 Gln Gly Asp Arg Ala Ser Leu Asp Ala Ala Asp Ser Gly Arg Gly Ser
 1235 1240 1245
 Trp Thr Ser Cys Ser Ser Gly Ser His Asp Asn Ile Gln Thr Ile Gln
 1250 1255 1260
 His Gln Arg Ser Trp Glu Thr Leu Pro Phe Gly His Thr His Phe Asp
 1265 1270 1275 1280
 Tyr Ser Gly Asp Pro Ala Gly Leu Trp Ala Ser Ser Ser His Met Asp
 1285 1290 1295
 Gln Ile Met Phe Ser Asp His Ser Thr Lys Tyr Asn Arg Gln Asn Gln
 1300 1305 1310
 Ser Arg Glu Ser Leu Glu Gln Ala Gln Ser Arg Ala Ser Trp Ala Ser
 1315 1320 1325
 Ser Thr Gly Tyr Trp Gly Glu Asp Ser Glu Gly Asp Thr Gly Thr Ile
 1330 1335 1340
 Lys Arg Arg Gly Gly Lys Asp Val Ser Ile Glu Ala Glu Ser Ser Ser
 1345 1350 1355 1360
 Leu Thr Ser Val Thr Thr Glu Glu Thr Lys Pro Val Pro Met Pro Ala
 1365 1370 1375
 His Ile Ala Val Ala Ser Ser Thr Thr Lys Gly Leu Ile Ala Arg Lys
 1380 1385 1390
 Glu Gly Arg Tyr Arg Glu Pro Pro Pro Thr Pro Pro Gly Tyr Ile Gly
 1395 1400 1405
 Ile Pro Ile Thr Asp Phe Pro Glu Gly His Ser His Pro Ala Arg Lys
 1410 1415 1420
 Pro Pro Asp Tyr Asn Val Ala Leu Gln Arg Ser Arg Met Val Ala Arg
 1425 1430 1435 1440
 Ser Ser Asp Thr Ala Gly Pro Ser Ser Val Gln Gln Pro His Gly His
 1445 1450 1455
 Pro Thr Ser Ser Arg Pro Val Asn Lys Pro Gln Trp His Lys Pro Asn
 1460 1465 1470
 Glu Ser Asp Pro Arg Leu Ala Pro Tyr Gln Ser Gln Gly Phe Ser Thr
 1475 1480 1485
 Glu Glu Asp Glu Asp Glu Gln Val Ser Ala Val
 1490 1495

<210> 3

<211> 799

<212> DNA

<213> Mus musculus

<400> 3

actaaaggga acaaaagctg gagctccacc gcggtggcgg ccgctctaga actagtggat 60
 cccccgggct gcaggaattc aagcgggtggg aaggatgtct ccgctgaggc agagagcagc 120

```

agcatggtgc cctgactac agaggaagcc aaacctgtcc ctatgcctgc ccacatagct 180
gtgacgccga gcactaccaa gggactcatc gcacggaagg aaggcaggta ccgggagccg 240
cctcccacac ctccaggcta cgtgggcatc cccattgccg atttcccaga agggccttgc 300
caccgggcca ggaagcccc ggattacaac gtggccctgc agcgggtccg catggtggca 360
cggccctactg agggcccgcc accggggccag acgcccctg cagccgcagc cagccggccg 420
ggcagcaagc cacagtggca caagcccagc gacgcagacc cagccctcgc gcccttccag 480
gcaggccttcg caggagcgga ggaggacgaa gatgaacaag tgtctgctgt ttgaggcgca 540
ggctccttga tccacagtga gccacccaaa ggagagcaca agaagacgtc ccaagccttg 600
gagccttggc acgcacatct gaggatgggtg gaccagtttg cctccttccc tgccttaaag 660
cagcatgggg cttcttctcc ctttcttctt tcccccttg catgtgaaat actgtgaaga 720
aattgccctg gcactttgca gacttggtgc ttgaaatgca cagcccagca gccctgagc 780
tgctgcctgc cacgtcacg 799

```

<210> 4
 <211> 286
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIMILAR
 <222>
 <223> Xaa is any aa

<400> 4
 Thr Lys Gly Asn Lys Ser Trp Ser Ser Thr Ala Val Ala Ala Ala Leu
 1 5 10 15
 Glu Leu Val Asp Pro Pro Gly Cys Arg Asn Ser Ser Gly Gly Lys Asp
 20 25 30
 Val Ser Ala Glu Ala Glu Ser Ser Ser Met Val Pro Val Thr Thr Glu
 35 40 45
 Glu Ala Lys Pro Val Pro Met Pro Ala His Ile Ala Val Thr Pro Ser
 50 55 60
 Thr Thr Lys Gly Leu Ile Ala Arg Lys Glu Gly Arg Tyr Arg Glu Pro
 65 70 75 80
 Pro Pro Thr Pro Pro Gly Tyr Val Gly Ile Pro Ile Ala Asp Phe Pro
 85 90 95
 Glu Gly Pro Cys His Pro Ala Arg Lys Pro Pro Asp Tyr Asn Val Ala
 100 105 110
 Leu Gln Arg Ser Arg Met Val Ala Arg Pro Thr Glu Ala Pro Ala Pro
 115 120 125
 Gly Gln Thr Pro Pro Ala Ala Ala Ser Arg Pro Gly Ser Lys Pro
 130 135 140
 Gln Trp His Lys Pro Ser Asp Ala Asp Pro Arg Leu Ala Pro Phe Gln
 145 150 155 160
 Ala Ala Ser His Ser Gly Thr Ser Pro Ala Thr Gln Thr His Ala Ser
 165 170 175

Arg	Pro	Ser	Arg	Gln	Ala	Ser	Gln	Glu	Arg	Arg	Arg	Thr	Lys	Met	Asn
			180					185					190		
Lys	Cys	Leu	Leu	Phe	Glu	Ala	Gln	Ala	Pro	Xaa	Ser	Thr	Val	Ser	His
		195					200					205			
Pro	Lys	Glu	Ser	Thr	Arg	Arg	Arg	Pro	Lys	Pro	Trp	Ser	Leu	Gly	Thr
	210					215					220				
His	Ile	Xaa	Gly	Trp	Trp	Thr	Ser	Leu	Pro	Pro	Ser	Leu	Pro	Xaa	Ser
225					230					235					240
Ser	Met	Gly	Leu	Leu	Leu	Pro	Phe	Phe	Leu	Ser	Pro	Leu	His	Val	Lys
			245						250					255	
Tyr	Cys	Glu	Glu	Ile	Ala	Leu	Ala	Leu	Cys	Arg	Leu	Val	Ala	Xaa	Asn
		260						265					270		
Ala	Gln	Pro	Ser	Ser	Pro	Xaa	Ala	Ala	Ala	Cys	His	Val	Thr		
	275					280						285			

<210> 5
 <211> 245
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIMILAR
 <222>
 <223> Xaa is any aa

<400> 5	Leu	Lys	Gly	Thr	Lys	Ala	Gly	Ala	Pro	Pro	Arg	Trp	Arg	Pro	Leu	Xaa
	1				5					10					15	
	Asn	Xaa	Trp	Ile	Pro	Arg	Ala	Ala	Gly	Ile	Gln	Ala	Val	Gly	Arg	Met
			20						25					30		
	Ser	Pro	Leu	Arg	Gln	Arg	Ala	Ala	Ala	Trp	Cys	Pro	Xaa	Leu	Gln	Arg
		35					40						45			
	Lys	Pro	Asn	Leu	Ser	Leu	Cys	Leu	Pro	Thr	Xaa	Leu	Xaa	Arg	Arg	Ala
		50					55					60				
	Leu	Pro	Arg	Asp	Ser	Ser	His	Gly	Arg	Lys	Ala	Gly	Thr	Gly	Ser	Arg
	65					70					75					80
	Leu	Pro	His	Leu	Gln	Ala	Thr	Trp	Ala	Ser	Pro	Leu	Pro	Ile	Ser	Gln
					85					90					95	
	Lys	Gly	Leu	Ala	Thr	Arg	Pro	Gly	Ser	Pro	Arg	Ile	Thr	Thr	Trp	Pro
		100						105						110		
	Cys	Ser	Gly	Pro	Ala	Trp	Trp	His	Gly	Pro	Leu	Arg	Pro	Arg	His	Arg
		115						120					125			

Ala Arg Arg Arg Leu Gln Pro Gln Pro Ala Gly Arg Arg Leu Arg Arg
 130 135 140
 Ser Gly Gly Gly Arg Arg Xaa Thr Ser Val Cys Cys Leu Arg Arg Arg
 145 150 155 160
 Leu Leu Asp Pro Gln Xaa Ala Thr Gln Arg Arg Ala Gln Glu Asp Val
 165 170 175
 Pro Ser Leu Gly Ala Leu Ala Arg Thr Ser Glu Asp Gly Gly Pro Val
 180 185 190
 Cys Leu Leu Pro Cys Leu Lys Ala Ala Trp Gly Phe Phe Ser Pro Ser
 195 200 205
 Ser Phe Pro Leu Cys Met Xaa Asn Thr Val Lys Lys Leu Pro Trp His
 210 215 220
 Phe Ala Asp Leu Leu Leu Glu Met His Ser Pro Ala Ala Pro Glu Leu
 225 230 235 240
 Leu Pro Ala Thr Ser
 245

<210> 6
 <211> 266
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SIMILAR
 <222>
 <223> Xaa is any aa

<400> 6
 Xaa Arg Glu Gln Lys Leu Glu Leu His Arg Gly Gly Gly Arg Ser Arg
 1 5 10 15
 Thr Ser Gly Ser Pro Gly Leu Gln Glu Phe Lys Arg Trp Glu Gly Cys
 20 25 30
 Leu Arg Xaa Gly Arg Glu Gln Gln His Gly Ala Arg Asp Tyr Arg Gly
 35 40 45
 Ser Gln Thr Cys Pro Tyr Ala Cys Pro His Ser Cys Asp Ala Glu His
 50 55 60
 Tyr Gln Gly Thr His Arg Thr Glu Gly Arg Gln Val Pro Gly Ala Ala
 65 70 75 80
 Ser His Thr Ser Arg Leu Arg Gly His Pro His Cys Arg Phe Pro Arg
 85 90 95
 Arg Ala Leu Pro Pro Gly Gln Glu Ala Pro Gly Leu Gln Arg Gly Pro
 100 105 110

Ala Ala Val Pro His Gly Gly Thr Ala His Xaa Gly Pro Gly Thr Gly
 115 120 125
 Pro Asp Ala Ala Cys Ser Arg Ser Gln Pro Ala Gly Gln Gln Ala Thr
 130 135 140
 Val Ala Gln Ala Gln Arg Arg Arg Pro Thr Pro Arg Ala Leu Pro Gly
 145 150 155 160
 Ala Gly Phe Ala Gly Ala Glu Glu Asp Glu Asp Glu Gln Val Ser Ala
 165 170 175
 Val Xaa Gly Ala Gly Ser Leu Ile His Ser Glu Pro Pro Lys Gly Glu
 180 185 190
 His Lys Lys Thr Ser Gln Ala Leu Glu Pro Trp His Ala His Leu Arg
 195 200 205
 Met Val Asp Gln Phe Ala Ser Phe Pro Ala Leu Lys Gln His Gly Ala
 210 215 220
 Ser Ser Pro Leu Leu Pro Phe Pro Phe Ala Cys Glu Ile Leu Xaa Arg
 225 230 235 240
 Asn Cys Pro Gly Thr Leu Gln Thr Cys Cys Leu Lys Cys Thr Ala Gln
 245 250 255
 Gln Pro Leu Ser Cys Cys Leu Pro Arg His
 260 265

<210> 7
 <211> 307
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 7
 Ser Asn Val His Phe Leu His Leu Asn Ala Tyr Glu Leu Ala Ile Gln
 1 5 10 15
 Leu Thr Leu Gln Asp Phe Ala Asn Phe Arg Gln Ile Glu Ser Thr Glu
 20 25 30
 Tyr Val Asp Glu Leu Phe Glu Leu Arg Ser Arg Tyr Gly Val Pro Met
 35 40 45
 Leu Ser Lys Phe Ala Glu Leu Val Asn Arg Glu Met Phe Trp Val Val
 50 55 60
 Ser Glu Ile Cys Ala Glu His Asn Ile Val Arg Arg Met Lys Ile Val
 65 70 75 80
 Lys Gln Phe Ile Lys Ile Ala Arg His Cys Lys Glu Cys Arg Asn Phe
 85 90 95
 Asn Ser Met Phe Ala Ile Val Ser Gly Leu Gly His Gly Ala Val Ser

100					105					110					
Arg	Leu	Arg	Gln	Thr	Trp	Glu	Lys	Leu	Pro	Ser	Lys	Tyr	Gln	Arg	Leu
115						120						125			
Phe	Asn	Asp	Leu	Gln	Asp	Leu	Met	Asp	Pro	Ser	Arg	Asn	Met	Ser	Lys
130						135						140			
Tyr	Arg	Gln	Leu	Val	Ser	Ala	Glu	Leu	Leu	Ala	Gln	His	Pro	Ile	Ile
145						150						155			160
Pro	Phe	Tyr	Pro	Ile	Val	Lys	Lys	Asp	Leu	Thr	Phe	Ile	His	Leu	Gly
			165						170						175
Asn	Asp	Thr	Arg	Val	Asp	Gly	Leu	Val	Asn	Phe	Glu	Lys	Leu	Arg	Met
			180						185						190
Leu	Ala	Lys	Glu	Val	Arg	Leu	Leu	Thr	His	Met	Cys	Ser	Ser	Pro	Tyr
195						200						205			
Asp	Leu	Leu	Ser	Ile	Leu	Glu	Leu	Lys	Gly	Gln	Ser	Pro	Ser	Asn	Ala
210						215						220			
Leu	Phe	Ser	Leu	Asn	Gln	Met	Ser	Ala	Ser	Gln	Ser	Asn	Ala	Ala	Ala
225						230						235			240
Gly	Thr	Val	Ile	Ala	Ala	Asn	Ala	Gly	Gln	Ala	Thr	Ile	Lys	Arg	Arg
			245						250						255
Lys	Lys	Ser	Thr	Ala	Ala	Pro	Asn	Pro	Lys	Lys	Met	Phe	Glu	Glu	Ala
			260						265						270
Gln	Met	Val	Arg	Arg	Val	Lys	Ala	Tyr	Leu	Asn	Ser	Leu	Lys	Ile	Leu
275						280						285			
Ser	Asp	Glu	Asp	Leu	Leu	His	Lys	Phe	Ser	Leu	Glu	Cys	Glu	Pro	Ala
290						295						300			
His Gly Ser															
305															

<210> 8

<211> 270

<212> PRT

<213> Homo sapiens

<400> 8

Ser	Ala	Glu	Gly	Leu	Asp	Leu	Val	Ser	Ala	Lys	Asp	Leu	Ala	Gly	Gln
1				5					10					15	

Leu	Thr	Asp	His	Asp	Trp	Ser	Leu	Phe	Asn	Ser	Ile	His	Gln	Val	Glu
		20						25					30		

Leu	Ile	His	Tyr	Val	Leu	Gly	Pro	Gln	His	Leu	Arg	Asp	Val	Thr	Thr
		35					40					45			

Ala Asn Leu Glu Arg Phe Met Arg Arg Phe Asn Glu Leu Gln Tyr Trp
 50 55 60
 Val Ala Thr Glu Leu Cys Leu Cys Pro Val Pro Gly Pro Arg Ala Gln
 65 70 75 80
 Leu Leu Arg Lys Phe Ile Lys Leu Ala Ala His Leu Lys Glu Gln Lys
 85 90 95
 Asn Leu Asn Ser Phe Phe Ala Val Met Phe Gly Leu Ser Asn Ser Ala
 100 105 110
 Ile Ser Arg Leu Ala His Thr Trp Glu Arg Leu Pro His Lys Val Arg
 115 120 125
 Lys Leu Tyr Ser Ala Leu Glu Arg Leu Leu Asp Pro Ser Trp Asn His
 130 135 140
 Arg Val Tyr Arg Leu Ala Leu Ala Lys Leu Ser Pro Pro Val Ile Pro
 145 150 155 160
 Phe Met Pro Leu Leu Leu Lys Asp Met Thr Phe Ile His Glu Gly Asn
 165 170 175
 His Thr Leu Val Glu Asn Leu Ile Asn Phe Glu Lys Met Arg Met Met
 180 185 190
 Ala Arg Ala Ala Arg Met Leu His His Cys Arg Ser His Asn Pro Val
 195 200 205
 Pro Leu Ser Pro Leu Arg Ser Arg Val Ser His Leu His Glu Asp Ser
 210 215 220
 Gln Val Ala Arg Ile Ser Thr Cys Ser Glu Gln Ser Leu Ser Thr Arg
 225 230 235 240
 Ser Pro Ala Ser Thr Trp Ala Tyr Val Gln Gln Leu Lys Val Ile Asp
 245 250 255
 Asn Gln Arg Glu Leu Ser Arg Leu Ser Arg Glu Leu Glu Pro
 260 265 270

<210> 9

<211> 244

<212> PRT

<213> Mus musculus

<400> 9

Lys Ala Glu Cys Phe Glu Thr Leu Ser Ala Met Glu Leu Ala Glu Gln
 1 5 10 15
 Ile Thr Leu Leu Asp His Ile Val Phe Arg Ser Ile Pro Tyr Glu Glu
 20 25 30
 Phe Leu Gly Gln Gly Trp Met Lys Leu Asp Lys Asn Glu Arg Thr Pro
 35 40 45

Tyr Ile Met Lys Thr Ser Gln His Phe Asn Glu Met Ser Asn Leu Val
 50 55 60
 Ala Ser Gln Ile Met Asn Tyr Ala Asp Ile Ser Ser Arg Pro Asn Ala
 65 70 75 80
 Ile Glu Lys Trp Val Ala Val Ala Asp Ile Cys Arg Cys Leu His Asn
 85 90 95
 Tyr Asn Gly Val Leu Glu Ile Thr Ser Ala Leu Asn Arg Ser Pro Ile
 100 105 110
 Tyr Arg Leu Lys Lys Thr Trp Ala Lys Val Ser Lys Gln Thr Lys Ala
 115 120 125
 Leu Met Asp Lys Leu Gln Lys Thr Val Ser Ser Glu Gly Arg Phe Lys
 130 135 140
 Asn Leu Arg Glu Thr Leu Lys Asn Cys Asn Pro Pro Ala Val Pro Tyr
 145 150 155 160
 Leu Gly Met Tyr Leu Thr Asp Leu Ala Phe Ile Glu Glu Gly Thr Pro
 165 170 175
 Asn Phe Thr Glu Glu Gly Leu Val Asn Phe Ser Lys Met Arg Met Ile
 180 185 190
 Ser His Ile Ile Arg Glu Ile Arg Gln Phe Gln Gln Thr Ala Tyr Arg
 195 200 205
 Ile Asp Gln Gln Pro Lys Val Ile Gln Tyr Leu Leu Asp Lys Ala Leu
 210 215 220
 Val Ile Asp Glu Asp Ser Leu Tyr Glu Leu Ser Leu Lys Ile Glu Pro
 225 230 235 240
 Arg Leu Pro Ala

<210> 10
 <211> 249
 <212> PRT
 <213> Homo sapiens

<400> 10
 Asp Glu Ile Thr Leu Leu Thr Leu His Pro Leu Glu Leu Ala Arg Gln
 1 5 10 15
 Leu Thr Leu Leu Glu Phe Glu Met Tyr Lys Asn Val Lys Pro Ser Glu
 20 25 30
 Leu Val Gly Ser Pro Trp Thr Lys Lys Asp Lys Glu Val Lys Ser Pro
 35 40 45
 Asn Leu Leu Lys Ile Met Lys His Thr Thr Asn Val Thr Arg Trp Ile

50

55

60

Glu Lys Ser Ile Thr Glu Ala Glu Asn Tyr Glu Glu Arg Leu Ala Ile
65 70 75 80

Met Gln Arg Ala Ile Glu Val Met Met Val Met Leu Glu Leu Asn Asn
85 90 95

Phe Asn Gly Ile Leu Ser Ile Val Ala Ala Met Gly Thr Ala Ser Val
100 105 110

Tyr Arg Leu Arg Trp Thr Phe Gln Gly Leu Pro Glu Arg Tyr Arg Lys
115 120 125

Phe Leu Glu Glu Cys Arg Glu Leu Ser Asp Asp His Leu Lys Lys Tyr
130 135 140

Gln Glu Arg Leu Arg Ser Ile Asn Pro Pro Cys Val Pro Phe Phe Gly
145 150 155 160

Arg Tyr Leu Thr Asn Ile Leu His Leu Glu Glu Gly Asn Pro Asp Leu
165 170 175

Leu Ala Asn Thr Glu Leu Ile Asn Phe Ser Lys Arg Arg Lys Val Ala
180 185 190

Glu Ile Ile Gly Glu Ile Gln Gln Tyr Gln Asn Gln Pro Tyr Cys Leu
195 200 205

Asn Glu Glu Ser Thr Ile Arg Gln Phe Phe Glu Gln Leu Asp Pro Phe
210 215 220

Asn Gly Leu Ser Asp Lys Gln Met Ser Asp Tyr Leu Tyr Asn Glu Ser
225 230 235 240

Leu Arg Ile Glu Pro Arg Gly Cys Lys
245

<210> 11

<211> 243

<212> PRT

<213> Homo sapiens

<400> 11

Val Ser Leu Leu Phe Asp His Leu Glu Pro Glu Glu Leu Ser Glu His
1 5 10 15

Leu Thr Tyr Leu Glu Phe Lys Ser Phe Arg Arg Ile Ser Phe Ser Asp
20 25 30

Tyr Gln Asn Tyr Leu Val Asn Ser Cys Val Lys Glu Asn Pro Thr Met
35 40 45

Glu Arg Ser Ile Ala Leu Cys Asn Gly Ile Ser Gln Trp Val Gln Leu
50 55 60

Met	Val	Leu	Ser	Arg	Pro	Thr	Pro	Gln	Leu	Arg	Ala	Glu	Val	Phe	Ile	65	70	75	80
Lys	Phe	Ile	Gln	Val	Ala	Gln	Lys	Leu	His	Gln	Leu	Gln	Asn	Phe	Asn	85	90	95	
Thr	Leu	Met	Ala	Val	Ile	Gly	Gly	Leu	Cys	His	Ser	Ser	Ile	Ser	Arg	100	105	110	
Leu	Lys	Glu	Thr	Ser	Ser	His	Val	Pro	His	Glu	Ile	Asn	Lys	Val	Leu	115	120	125	
Gly	Glu	Met	Thr	Glu	Leu	Leu	Ser	Ser	Ser	Arg	Asn	Tyr	Asp	Asn	Tyr	130	135	140	
Arg	Arg	Ala	Tyr	Gly	Glu	Cys	Thr	Asp	Phe	Lys	Ile	Pro	Ile	Leu	Gly	145	150	155	160
Val	His	Leu	Lys	Asp	Leu	Ile	Ser	Leu	Tyr	Glu	Ala	Met	Pro	Asp	Tyr	165	170	175	
Leu	Glu	Asp	Gly	Lys	Val	Asn	Val	His	Lys	Leu	Leu	Ala	Leu	Tyr	Asn	180	185	190	
His	Ile	Ser	Glu	Leu	Val	Gln	Leu	Gln	Glu	Val	Ala	Pro	Pro	Leu	Glu	195	200	205	
Ala	Asn	Lys	Asp	Leu	Val	His	Leu	Leu	Thr	Leu	Ser	Leu	Asp	Leu	Tyr	210	215	220	
Tyr	Thr	Glu	Asp	Glu	Ile	Tyr	Glu	Leu	Ser	Tyr	Ala	Arg	Glu	Pro	Arg	225	230	235	240
Asn His Arg																			

<210> 12

<211> 48

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: unavailable

<400> 12

Ile	Arg	Gly	Gly	Thr	Lys	Glu	Ala	Leu	Ile	Glu	His	Leu	Thr	Ser	His	1	5	10	15
Glu	Leu	Val	Asp	Ala	Ala	Phe	Asn	Val	Thr	Met	Leu	Ile	Thr	Phe	Arg	20	25	30	
Ser	Ile	Leu	Thr	Thr	Arg	Glu	Phe	Phe	Tyr	Ala	Leu	Ile	Tyr	Arg	Tyr	35	40	45	

<210> 13
<211> 47
<212> PRT
<213> Mus musculus

<400> 13
Ile Lys Gly Gly Thr Val Val Lys Leu Ile Glu Arg Leu Thr Tyr His
1 5 10 15
Met Tyr Ala Asp Pro Asn Phe Val Arg Thr Phe Leu Thr Tyr Arg Ser
20 25 30
Phe Cys Lys Gln Glu Leu Leu Asn Leu Leu Ile Glu Arg Phe Glu
35 40 45

<210> 14
<211> 48
<212> PRT
<213> Mus musculus

<400> 14
Ile Arg Tyr Ala Ser Val Glu Ala Leu Leu Glu Arg Leu Thr Asp Leu
1 5 10 15
Arg Phe Leu Ser Ile Asp Phe Leu Asn Thr Phe Leu His Thr Tyr Arg
20 25 30
Ile Phe Thr Thr Ala Thr Val Val Leu Ala Lys Leu Ser Asp Ile Tyr
35 40 45

<210> 15
<211> 50
<212> PRT
<213> Unknown Organism

<220>
<221> SIMILAR
<222>
<223> Xaa is any aa

<220>
<223> Description of Unknown Organism: unavailable

<400> 15
Val Val Lys Phe Ala Ser Leu Asn Lys Leu Val Glu His Leu Thr His
1 5 10 15
Asp Ser Lys His Asp Leu Gln Phe Leu Lys Thr Phe Leu Met Thr Tyr
20 25 30

Gln Ser Phe Cys Thr Pro Glu Lys Leu Met Ser Lys Leu Gln Gln Arg
35 40 45

Tyr Xaa
50

<210> 16
<211> 77
<212> PRT
<213> Drosophila melanogaster

<400> 16
Leu Thr Arg Ser Ser Arg Asp Glu Pro Leu Asn Phe Arg Ile Val Gly
1 5 10 15

Gly Tyr Glu Leu Arg Gly Val Ala Ile Ala Thr Gly Asn Ala Ala Val
20 25 30

Gly Ile Tyr Ile Ser His Val Glu Pro Gly Ser Lys Ala Gln Asp Val
35 40 45

Gly Leu Lys Arg Gly Asp Gln Ile His Glu Val Asn Gly Gln Ser Leu
50 55 60

Asp His Val Thr Ser Lys Arg Ala Leu Glu Ile Leu Thr
65 70 75

<210> 17
<211> 71
<212> PRT
<213> Homo sapiens

<400> 17
Asn Leu Lys Lys Asp Ala Lys Tyr Gly Leu Gly Phe Gln Ile Ile Gly
1 5 10 15

Gly Glu Lys Met Gly Arg Leu Asp Leu Gly Ile Phe Ile Ser Ser Val
20 25 30

Ala Pro Gly Gly Pro Ala Asp Leu Asp Gly Cys Leu Lys Pro Gly Asp
35 40 45

Arg Leu Ile Ser Val Asn Ser Val Ser Leu Glu Gly Val Ser His His
50 55 60

Ala Ala Ile Glu Ile Leu Gln
65 70

<210> 18
<211> 67
<212> PRT
<213> Homo sapiens

<400> 18

Ile Val Ile His Arg Gly Ser Thr Gly Leu Gly Phe Asn Ile Val Gly
 1 5 10 15
 Gly Glu Asp Gly Glu Gly Ile Phe Ile Ser Phe Ile Leu Ala Gly Gly
 20 25 30
 Pro Ala Asp Leu Ser Gly Glu Leu Arg Lys Gly Asp Gln Ile Leu Ser
 35 40 45
 Val Asn Gly Val Asp Leu Arg Asn Ala Ser His Glu Gln Ala Ala Ile
 50 55 60
 Ala Leu Lys
 65

<210> 19
 <211> 68
 <212> PRT
 <213> Rattus rattus

<400> 19
 Val Glu Leu Pro Lys Thr Glu Glu Gly Leu Gly Phe Asn Ile Met Gly
 1 5 10 15
 Gly Lys Glu Gln Asn Ser Pro Ile Tyr Ile Ser Arg Ile Ile Pro Gly
 20 25 30
 Gly Ile Ala Asp Arg His Gly Gly Leu Lys Arg Gly Asp Gln Leu Leu
 35 40 45
 Ser Val Asn Gly Val Ser Val Glu Gly Glu His His Glu Lys Ala Val
 50 55 60
 Glu Leu Leu Lys
 65

<210> 20
 <211> 65
 <212> PRT
 <213> Homo sapiens

<400> 20
 Val Lys Val Gln Lys Gly Ser Glu Pro Leu Gly Ile Ser Ile Val Ser
 1 5 10 15
 Gly Glu Lys Gly Gly Ile Tyr Val Ser Lys Val Thr Val Gly Ser Ile
 20 25 30
 Ala His Gln Ala Gly Leu Glu Tyr Gly Asp Gln Leu Leu Glu Phe Asn
 35 40 45
 Gly Ile Asn Leu Arg Ser Ala Thr Glu Gln Gln Ala Arg Leu Ile Ile
 50 55 60
 Gly

65

<210> 21
<211> 98
<212> PRT
<213> *Drosophila melanogaster*

<400> 21

Met	Val	Phe	Ala	Val	Val	Asp	Lys	Ala	Gly	Thr	Val	Val	Met	Ser	Asp
1				5					10					15	
Gly	Glu	Glu	Leu	Asp	Ser	Trp	Ser	Val	Leu	Ile	Asn	Gly	Ala	Val	Glu
			20					25					30		
Ile	Glu	His	Ala	Asn	Gly	Ser	Arg	Glu	Glu	Leu	Gln	Met	Gly	Asp	Ser
		35					40					45			
Phe	Gly	Ile	Leu	Pro	Thr	Met	Asp	Lys	Leu	Tyr	His	Arg	Gly	Val	Met
	50					55					60				
Arg	Thr	Lys	Cys	Asp	Asp	Cys	Gln	Phe	Val	Cys	Ile	Thr	Gln	Thr	Asp
65					70					75					80
Tyr	Tyr	Arg	Ile	Gln	His	Gln	Gly	Glu	Glu	Asn	Thr	Arg	Arg	His	Glu
			85						90					95	

Asp Glu

<210> 22
<211> 99
<212> PRT
<213> *Homo sapiens*

<400> 22

Leu	Leu	Phe	Glu	Pro	His	Ser	Lys	Ala	Gly	Thr	Val	Leu	Phe	Ser	Gln
1				5					10					15	
Gly	Asp	Lys	Gly	Thr	Ser	Trp	Tyr	Ile	Ile	Trp	Lys	Gly	Ser	Val	Asn
			20					25					30		
Val	Val	Thr	His	Gly	Lys	Gly	Leu	Val	Thr	Thr	Leu	His	Glu	Gly	Asp
		35					40					45			
Asp	Phe	Gly	Gln	Leu	Ala	Leu	Val	Asn	Asp	Ala	Pro	Arg	Ala	Ala	Thr
	50					55					60				
Ile	Ile	Leu	Arg	Glu	Asp	Asn	Cys	His	Phe	Leu	Arg	Val	Asp	Lys	Gln
65					70					75					80
Asp	Phe	Asn	Arg	Ile	Ile	Lys	Asp	Val	Glu	Ala	Lys	Thr	Met	Arg	Leu
			85						90					95	

Glu Glu His

<210> 23
<211> 97
<212> PRT
<213> Homo sapiens

<400> 23

Ala	Met	Phe	Pro	Val	Thr	His	Ile	Ala	Gly	Glu	Thr	Val	Ile	Gln	Gln
1				5					10					15	
Gly	Asn	Glu	Gly	Asp	Asn	Phe	Tyr	Val	Val	Asp	Gln	Gly	Glu	Val	Asp
		20						25					30		
Val	Tyr	Val	Asn	Gly	Glu	Trp	Val	Thr	Asn	Ile	Ser	Glu	Gly	Gly	Ser
		35					40					45			
Phe	Gly	Glu	Leu	Ala	Leu	Ile	Tyr	Gly	Thr	Pro	Arg	Ala	Ala	Thr	Val
	50					55					60				
Lys	Ala	Lys	Thr	Asp	Leu	Lys	Leu	Trp	Gly	Ile	Asp	Arg	Asp	Ser	Tyr
65					70					75					80
Arg	Arg	Ile	Leu	Met	Gly	Ser	Thr	Leu	Arg	Lys	Arg	Lys	Met	Tyr	Glu
			85						90					95	

Glu

<210> 24
<211> 97
<212> PRT
<213> Homo sapiens

<400> 24

Cys	Met	Tyr	Gly	Arg	Asn	Tyr	Gln	Gln	Gly	Ser	Tyr	Ile	Ile	Lys	Gln
1				5					10					15	
Gly	Glu	Pro	Gly	Asn	His	Ile	Phe	Val	Leu	Ala	Glu	Gly	Arg	Leu	Glu
			20					25					30		
Val	Phe	Gln	Gly	Glu	Lys	Leu	Leu	Ser	Ser	Ile	Pro	Met	Trp	Thr	Thr
		35					40					45			
Phe	Gly	Glu	Leu	Ala	Ile	Leu	Tyr	Asn	Cys	Thr	Arg	Thr	Ala	Ser	Val
	50					55					60				
Lys	Ala	Ile	Thr	Asn	Val	Lys	Thr	Trp	Ala	Leu	Asp	Arg	Glu	Val	Phe
65					70					75					80
Gln	Asn	Ile	Met	Arg	Arg	Thr	Ala	Gln	Ala	Arg	Asp	Glu	Gln	Tyr	Arg
			85						90					95	

Asn

<210> 25
<211> 103
<212> PRT
<213> Mus musculus

<400> 25

```
Arg Leu Arg Ser Val Val Tyr Leu Pro Asn Asp Tyr Val Cys Lys Lys
 1              5              10              15

Gly Glu Ile Gly Arg Glu Met Tyr Ile Ile Gln Ala Gly Gln Val Gln
      20              25              30

Val Leu Gly Gly Pro Asp Gly Lys Ser Val Leu Val Thr Leu Lys Ala
      35              40              45

Gly Ser Val Phe Gly Glu Ile Ser Leu Leu Ala Val Gly Gly Gly Asn
      50              55              60

Arg Arg Thr Ala Asn Val Val Ala His Gly Phe Thr Asn Leu Phe Ile
      65              70              75              80

Leu Asp Lys Lys Asp Leu Asn Glu Ile Leu Val His Tyr Pro Glu Ser
      85              90              95

Gln Lys Leu Leu Arg Lys Lys
      100
```

<210> 26
<211> 91
<212> PRT
<213> Unknown Organism

<220>

<223> Description of Unknown Organism: unavailable

<400> 26

```
Arg Glu Asp Phe Glu Ile Ile Arg Val Phe Asp Gly Asn Asn Ser Tyr
 1              5              10              15

Arg Ser Gln Ile Ser Arg Asn Ile Val Val Ala Lys His Val Ser Val
      20              25              30

Gln Gln Val Arg Asp Ala Ala Leu Arg Arg Phe His Ile Asn Asp Thr
      35              40              45

Pro Glu Arg Tyr Tyr Ile Thr Gln Val Val Gly Glu Val Glu Glu Glu
      50              55              60

Ile Leu Glu Asp Pro Val Pro Leu Arg Asn Val Lys Arg Pro Glu Gly
      65              70              75              80

Lys Arg Ala Gln Ile Phe Ile Arg Tyr Tyr Asp
      85              90
```

<210> 27
<211> 129
<212> PRT
<213> Unknown Organism

<220>

<223> Description of Unknown Organism: unavailable

<400> 27

Ser	Ile	Leu	Val	Thr	Ser	Gln	Asp	Lys	Ala	Pro	Ser	Val	Ile	Ser	Arg
1				5				10					15		
Val	Leu	Lys	Lys	Asn	Asn	Arg	Asp	Ser	Ala	Val	Ala	Ser	Glu	Tyr	Glu
		20						25					30		
Leu	Val	Gln	Leu	Leu	Pro	Gly	Glu	Arg	Glu	Leu	Thr	Ile	Pro	Ala	Ser
		35					40					45			
Ala	Asn	Val	Phe	Tyr	Ala	Met	Asp	Gly	Ala	Ser	His	Asp	Phe	Leu	Leu
	50					55					60				
Arg	His	Gly	Glu	Gly	Pro	Leu	Leu	Leu	His	Leu	Ala	Ser	Pro	Val	Ala
65					70					75					80
Arg	Leu	Pro	Gln	Glu	Leu	Leu	Arg	Val	Arg	Glu	Glu	Gly	Ala	Pro	Phe
			85					90						95	
Pro	Gly	Ser	Arg	Pro	Gln	Gly	Gly	Arg	Leu	His	Gly	His	Cys	Ser	Glu
			100					105					110		
Glu	Glu	Ala	Pro	Leu	Ala	Tyr	Arg	Ser	His	Gly	Val	His	Thr	Arg	Cys
		115					120					125			

Gly